

"All that glitters is not gold," and, on the other hand, not all that finds its way to the dust bin is worthless. For instance, says Tit-Bits, in Salford in one year 208,620 mineral water bottles, 15,700 other bottles and ninetyseven tons of broken glass estimated to represent 650,000 broken bottles, worth £3,000 at retail rates, were picked out of the refuse at the destructors. The marked bottles were returned to the makers at a penny per dozen, while the other glass was sold for £150 to be used in making mortar.

In Glasgow the corporation issues bags to business houses for the collection of waste paper, the contents being gathered periodically. In this way eighteen tons of paper are collected weekly, and a profit of £200 a year is realized. Solder is extracted from old tin cans found among the refuse and is sold at a fair price.

A Briquette Improvement.

Briquettes made with such cements as dextrin molasses, lixiviated cellulose or resinate of ammonia have the fault of dissolving in water. A plan of making them waterproof has been devised by Richard Bock, a Saxon engineer, who simply heats the finished briquettes until carbonized, when they become quite insoluble. If the cement is liable to ignite, the heating must take place in an airtight case or by means of hot gases.

Artificial Versus Natural Indigo. The following figures show in a striking way the heavy inroads which the German factories for the manufacture of artificial indigo are making into the English-Indian trade. In the fiscal year 1897-98 there were 1,339,099 acres of land devoted to the cultivation of indigo in India, and there was produced 166,812 hundredweight. In the fiscal gear 1901-02 the amount of land so used had decreased to 803,697 acres and the output of indigo to 121,475 hundredweight.

## HARNESSING THE OCEAN.

Inventor Claims He Can Get Great

Power From Breakers. Dr. D. K. Bryson of Pittsburg claims, ays the Philadelphia North American, to have invented a mechanism that is designed to utilize the force of ocean waves. His invention is the subject of the recent incorporation in Dover, Del., of the American Wave Motor company, with an authorized capital of \$1,000,-000. A demonstrating plant will be erected at Atlantic City this year. It may light a pier or its power may be adapted in some other way.

In the demonstrating plant ten buoys will be located out from the shore, the first as near as a depth of about eight feet of water can be secured, and the rest at regular intervals. These buoys, as they are thrown about and upward by the waves, will send along 150 horsepower from mere breakers of about three feet. With a six foot breaker twice this power will be obtained.

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them to drop, carrying with them are the same time transparent, of this bnown wheel wheel to sand the wound can the ble attached to a power wheel. The dropping of this buoy, pulling down the cable, is transmitted as power through ratchets. The movement to one side or the other of the buoy carries with it another cable which, also by ratchets, conveys this power to the wheel. By means of a speed regulator similar to the governor of a steam engine the power is hitched to a dynamo and is attached to motors to motors to motors to hit has been it has been order of the second of the second order

devices, the powerequire absolute wer, which do ans of stor-Mr. T ese oble wer, which do ans of storday last: Defate sularity. Regularity may University, Defate of the perifical mechanism. Dissipating Fog by Electricity.

An experiment was shown at a recent meeting of the Sanitary Inspectors' association of London by C. R. Darling demonstrating the dissipation of fogs by electricity. A heavy fog was caused by burning magnesia wire under a glass bell in which was inserted a brass rod connected with an induction coil. Upon charging this the small dust particles cohered and fell, and the fog was dispersed. The particles joined together to form flakes resembling snow and fell to the bottom of the jar.

# A Glass Eating Fungus.

According to the Lancet, a peculiar "glass disease" is said to have broken out among the windows of York cathedral. Some of the thirteenth and fourteenth century windows have already been removed with the hope that the spread of the epidemic, which appears to be due to a fungus, will be arrested. Some of the panes are perforated and eaten away to such an extent that the glass crumbles at the slightest touch.

Chemistry's Latest Triumph.

One of the latest achievements of chemistry is the discovery of a cheap process of making a certain compound that exists in tea and which has a medicinal value. The substance was formerly known as theophylline, but is now called theocine. When it is derived from the tea plant, the price is \$98 an ounce. Produced by synthetic chemistry, it is said to cost only \$2.20.

Birthplace of Type For Blind. Raised type for the blind is usually looked upon as a comparatively recent discovery. So it is in this country. In , however, such type has been in om time immemorial.

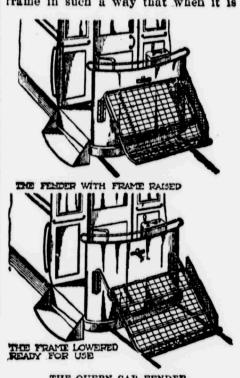
INGENIOUS CAR FENDER.

Device of a Brooklyn Man Has Some Novel Features.

John Quern of Brooklyn has perfected a trolley car fender combining some ingenious features, says the New York Herald. The invention, unlike many of its kind, is almost as effective if it fails to work as it would be in perfect operation. It not only throws the passenger out of harm's way, but by means of springs counteracts the effects of the collision after the manner of some of the impact breakers employed on European railroads.

Primarily the invention consists of a frame of hollow tubing provided with bent down or hooked ends, which are fitted into sockets secured to the dashboard of the car. Along the metal rods glides the secondary frame or fender of tubing and wire netting, which has a roller on the lower end where it strikes the ground.

Springs are attached to the fender frame in such a way that when it is



THE QUERN CAR FENDER.

drawn up off the ground they are at tension. The fender is kept from dropping by means of a hook attached to the dashboard. When the emergency requires, the motorman, either with his knee or with his hand, presses a lever on his side of the dashboard which throws off the hook, and the fender, assisted by the tension of the powerful helical springs, drops quickly to the track. The roller at the end of the frame assists the wayfarer out of danger, and the springs, which are then compressed, react and resist the force of the impact between the fender and the man on the track.

In cases when the motorman has not time to press the lever which is so conveniently near, the fender section, which when not released is within a few inches of the ground, strikes the pedestrian on the leg and throws him on the net. Fatal accidents such as are caused by the car passing over the person are thereby avoided, although the person run down may suffer considerably more than he would have done had the fender been unlocked in time.

New Dressing For Wounds. Attention is called to a new film dressing for wounds which, it is pre-

dicted, is to supersede the oilskin, thin mackintosh, gum elastic and antiseptic ter its. pushed up on the gauze now so generally employed in surgical dressings. The film is a cellutiem to drop, can be applied to make

> the fwithout disturbing the a perfectant

Which is Masso MOOD AND

It has been discovered, according to a writer in the Chicago Tribune, that the rose will cure a headache. perfume acts as a medicine upon the nerves. Its color, particularly if deep red, soothes the senses through the eyes, and its cleanliness and medicinal properties generally act upon the system not only as a curative, but as a

The sweeter the rose is the better, for the sweetness of this flower is of such peculiar delicacy that it neither cloys upon the nostrils nor palls upon the senses. Other flowers with heavy scent make one languid, but the rose is invigorating, and it is known now that the concentrated rose—that is, the natural smell as obtained from roses in great quantities—will certainly act upon the person as though he or she

had been fanned by a breeze. The rose curist asserts that if the scent is inhaled directly from the heart of the flower it is more beneficial to the patient than though it were inhaled at long distance through an essence or an extract. There are different ways of administering the rose medicine. The patient can make a pillow of roses. On this she should lay her head, taking care that half a dozen of the blooms are so arranged that they point toward the face. In this attitude her nose and mouth are buried in their sweetness. The idea is to go to sleep on a bed of roses. When you wake up, your headache will be cured. The best rose is the garden rose, as it retains its red rose scent without having lost any-

thing by being cultivated. An Antimosquito Plant. Leaves of a plant alleged to drive away mosquitoes have reached English botanists from Africa. The presence of a single plant is stated to clear a room of the pest, and an infusion of the leaves has been found an effective substitute for quinine in the treatment of mosquito conveyed malarial fever. The plant proves to be a kind of basil, Odmum viride, Willd.



and silver," you answer. That depends. says the New York Herald. If by preciousness is meant the value of the product in dollars and cents-our golden rule of measurement-then gold and silver are not the precious metals, according to the recently issued report of the United States geological survey, which gives us the money value of the products wrested from the earth's dark laboratory in 1902.

The gold, the precious yellow metal. poured from nature's crucible in this land last year is valued at \$78,000,000, and if to this we add the metal value of the silver we have \$111,000,000. But what is that compared with the pig iron product of the same time, which is valued at \$241,000,000? The iron produced is more precious than the gold and silver combined by \$130,000,000.

Modest copper, Indian complexioned copper, can put the oriental hued gold to the blush, for last year it enriched us in the sum of \$87,000,000, \$9,000,000 more than the value of the yellow metal. Even the base lead that was mined is one-third the value of the gold.

When we get to the minerals used for structural purposes, gold and silver are again distanced, for the building stone, clay and cements that were launched by us into the channels of commerce in 1902 are valued at \$182,000,000. The gold and silver produced in the same time were \$71,000,000 short of being enough to purchase this output.

When we go a little deeper and measure the value of the coal, petroleum and natural gas that we purloined from beneath the fruitful breast of Mother Earth, we find it four times that of all the gold and silver taken from the same treasure house in the same time.

Gold In Meteorites. At a meeting of the Royal Society of New South Wales, Mr. Liverst exhibited microscopic particles of a yellow malleable metal insoluble in nitric acid presenting all the appearance of gold taken from Australian and European siderites. This suggests an inference of great interest, that the great quantity of meteoric dust is depositing gold on land and sea, the dust probably amounting each year to many thousand tons.

### SMOKELESS STACKS.

Pittsburg Man Gets Patent For Valuable Invention. Latest in the field of smokeless stacks

is a Pittsburg inventor, L. E. Tucker, who has taken out a patent. Any stack of any size six feet or more in height can, he says, be made smokeless and sparkproof. The stack is equipped with collars and drip plates running off from the edges at varying intervals for about half the height of the stack. Water is forced half way up the stack by inspirators on small boilers and by donkey pumps on large boilers, the pipes in size being regulated by the size of the stack.

The drip plates and collars start from the bottom. Water flows on the drip plates, running over the edges of the collars, which drop about half an inch toward the center, then passes through a smoke box into the funnel at the bottom with a screen to prevent the sparks from going into the pipes. The water is to be carried off into barrels or tanks and can be used again and again. The continual water flow on the drip plates prevents rust, which was first thought to be an obstacle to the usefulness of the invention.

Smoke in attempting to pass through the flowing water sheets is turned into soot, which falls to the bottom of the smoke box and is carried off by the water to the barrels, where it rises to the top of the water. The water of course prevents the escape of any

It is thought, says the Prooklyn Eagle, that this device will permit the use of bituminous coal in establishments where anthracite has been exclusively used. Sawdust or other waste material might be used, and this would result in a saving of millions of dollars in and near cities where smoke is a prohibited nuisance.

The Uses of Crude Oil.

ten about the sprinkling of oil on roads knew it. Pretty soon they brought in principally as a means of preventing another one-he was ra ing-and then dust, the use of the oil in the same way another one in the same andition. We on river levees in some parts of the United States is said to have been to waste on us. The firs, 'ne in his found to be an excellent protection against the burrowings of gophers and body and there died. My brain sever ground squirrels, which threaten the was so clear as it was that night, and security of the barrier raised against after the other one was dead, which the encroachment of the flood waters. soon happened, I lived my life over Crude oil, says a writer in Cassier's again. Magazine, is so distasteful to these pests that they shun the ground covered with it.

A Consumption Antidote. The medical faculty of Berlin is probwhich were consumptive when they entered the trade, but recovered withdust kills the germs or prevents such not open them. Was it the translation from taking root.

An Antomatic Nursegirl. A Swiss mechanic claims to have in- thought, 'I am dead.' vented an automatic baby's nurse. The and rocks the cradle. When the crying be the last out. stops, the wires cease to vibrate, and the cradle stops rocking.

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# YELLOW JACK

The conversation turned on yellow fever, and I gave my experience:

"I brought up in the harbor of Havana one fine day in June, first mate of a trim little bark. In those days there was a 'yellow fever hospital' there, and in the season merchant vessels' crews were taken by M. Jacques at so much a head by contract. If taken sick, they were cured or killed, ated it until that moment. I never felt generally the latter, without further the meaning of it until then. Was I to charge, but if no contract was made, be buried alive? How long before it why, you paid by the day, but if ill go to the hospital you must by a Spanish ordinance.

"Well, you see, our boys commenced to go under, first one and then another, until I had hardly any one left, and to end this part I was lugged off myself to the 'Beglas.' They broke the fever on me, when I began to get so hungry I could have eaten a donkey, I think, but it was no use. Soup, gentlemen, a very little bread, and that was all. I complained to the house surgeon. He spoke of relapse, fatal results, etc., but I was not satisfied with that, so I watched my chance and got a piece of

called him, used to come round every said: morning at 10 o'clock, and when he entered my ward I was the first one he boy.'

"'You have been eating,' said he. I denied it, but he didn't believe me and passed on, with the cheering remark that 'I was a dead man.' I laughed, but seen after I began to feel queer. The servant looked very impertment, and I became oblivious to all surroundings in my attempt to correct him.

"I became conscious that evening

when some one lifted up my eyelid and then said: 'Take him out. It's no use.' It flashed on me in a second that they were to take me out to die. When 700 or 800 are dying daily, they can't waste their time with them-at least they think they can't. I had seen many go the same road, and they never came back. So I felt the cool night breeze first, and then that sensation that is indescribable, but inseparable from a deadhouse. I was put down on my While much has been said and writ. stretcher and left there to die, and I were given up, and the was no time delirium managed to get .... oss my

"The old songs I used to sing came back to me, and I could sing them, so to speak, internally. Scenes long forgotten passed in review, and after I had gone through it all I thought that it was years that I had lain there, it ing a peculiar observation to the effect seemed so long since I had left the that there is not a single consumptive bark-so long since I had heard any among the Berlin Plaster of Paris one speak. Gentlemen, I lived 10,000 Workers' union, many members of years that night. I could feel my hand against my side as you feel with your hand asleep, as you term it. I could out any specific cure. Similar observa- feel the dead man across me as though tions have been made in other cities he were pressing some one else, and among this kind of workers, which lead then by and by a slight roseate bue physicians to think that the gypsum took my eyelids. What was it? I could of the soul to the other, the great unknown world beyond the dark river? I thought so. I was not afraid. I

"The hue became more intense-it apparatus is attached to a cradle. If was the sun-and with it came the carthe baby cries, air waves cause spe- riers of the dead. Men dying with yelnograph, which sings a lullaby, while they bury early those who die during ployment. Thimonnier built new an simultaneously clockwork is released the night. I was the first in. I would better machines, but all his work was

> "I heard the steps of the negroes as they became fainter in their retreat. John J. Greenough took ou

and as they became louder in their advance I felt the stretcher lifted up, the oscillating motion as they bore me along, when, like a flash of lightning. came the conviction that I was not dead. I could not move. I tried in vain to open my eyes. I prayed that they would cast their eyes upon me, but I felt they would not. I could not see, but I knew they were not looking at me. I have heard the word agony used, gentlemen, but I never appreciwould be over? Would they walk over my head, and could I then hear them? Did the earth transmit sound vertically as well as horizontally? And how long before it would be all over?

"At last one carrier made a misstep, the stretcher canted to one side, and my head dropped down. They noticed that, then my face. They dropped the stretcher and went away. Soon the surges came.

"'Take him book,' said be. 'I'll try what I can do.'

"I had no pulse. My heart did not beat. They poured something down my throat. It cut its way down like a thread of fire. It increased in dimensions-that warm feeling-and soon in cake one night at 12 o'clock. Never did a pleasant swoon I lost all sense of anything taste so good. Then I went to everything. I awoke toward evening and could open my eyes. I could move. "Old 'Down Below,' as the sailors When the surgeon spoke, he merely

"'You were saved by fifteen feet, my

"In two weeks I was aboard the ship again, and I was the only one left of

"I did not feel it yet, the horrible thing I had gone through, until they reported the death of the captain. 'Died in the deadhouse,' they said. 'Buried this morning.' Then I got out of my berth, gentlemen, and I believe if ever a sincere prayer was offered to the 'throne of heavenly grace' it was made that night on board that vessel in the harbor of Havana."

# THE SEWING MACHINE.

Unsuccessful Inventions That Preceded Howe's Patent In 1846.

The technical beginning of the sewing machine industry in this country. was Sept. 10, 1846, when Elias Howe, Jr., obtained a patent for what grew into the first really practical sewing machine. Only three of the first Howe machines were made, however, and one of these was deposited in the patent office in Washington as a model. It was not until after 1850 that a factory for the making of sewing machines was built, so the enormous business of today has grown up in a short half century.

While Howe's invention marked the beginning of a successful industry, he was by no means the pioneer in efforts to substitute mechanical for hand sewing. As far back as 1770 Thomas Alsop patented in England a machine for embroidering. Another machine for embroidering in a loom was invented by John Duncan in 1804, and twenty-five years later another Englishman named Heilman patented still another embroidering machine.

The first recorded attempt at mechanical sewing was the invention of Thomas Saint, who took out a patent in England in 1790 for a machine which executed the old crochet stitch. It was not a success, but some of the the vari features of the Saint machine appear | tempera in the perfected machine of today.

Bartholemy Thimonnier patented in France in 1880 the first sewing machine put to practical use. Eighty of his machines were in use for sewing army clothing in 1841, when a mob destroyed them because convinced they cure cially arranged wires to operate a pho- low jack must be buried soon, and so would drive scamstresses out of em low jack must be buried soon, and so would drive scamstresses out of em low jack must be buried soon, and so



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patent for a sewin tended to sew learns, a practical use.

Walter Hunt of New Yo sewing machine in 1834, but protect it by a patent. A machine appeared Hunt di embodied the ideas of his 1834, but he was unable his claim.

A small army of inver after Howe's paten. cessful, and their ge to perfecting every chine. How well th is shown in the 850 ing machines and atc. by the United States since . the fact that the American chine leads all others in every countral threads in the world.-New York Herald.

WALKS WITHOUT CRUTCHES. I was much afflicted with sciatica, writes Ed. C. Nud, Iowaville, Sedgwick Co., Kan., "going about on crutches and suffering a deal of pain. I was induced to try Bailard's Snow Liniment, which relieved me. I used three 50 bottles. It is the greatest linimer ever used; have recommended in number of persons, all express selves as being benefitted by walk without crutches, abl form a great deal of light land farm." 25c 50c. and \$1.00 gists.

Alpine Plants In mill for The recent expedind guaran-Montana by the N garden has done muc of scientific Lotany. forms of plants were ple statistics were set

again destroyed by angry artisans sine. Orders delivered